



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,385	02/27/2002	Satoshi Hirahara	220049US0	4760
22850	7590	04/10/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	
DATE MAILED: 04/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Ca

Office Action Summary	Application No. 10/083,385	Applicant(s) HIRAHARA ET AL.	
	Examiner Hai Vo	Art Unit 1771	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-15, 30, 32, 34, 36-40 and 42-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-15, 30, 32, 34, 36-40 and 42-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Prosecution reopened

1. Prosecution on the merits of this application is reopened on claims 1-11, 13-15, 30, 32, 34-40, 42-47 considered unpatentable in view of newly discovered reference of Mitchell et al (US 4,396,663). The art rejections set forth in the 07/20/2005 Office Action are withdrawn in view of Applicants' arguments (see page 4 of the 12/20/2005 Pre-appeal Brief request).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-11, 13-15, 30, 32, 34, 36-39, and 42-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al (US 4,396,663). Mitchell discloses a carbon composite article comprising a carbonized woven fabric and a carbonaceous binder with an amount of 1 to 15% by weight (column 11, lines 28-30, example 1, claim 8). The carbonaceous binder is present discontinuously as particles on the surface of the fibers as shown in figure 2. The carbonaceous fibers are obtained by spraying a dispersion of fine particles of a thermosetting resin, subsequently conducting drying, then pressing and finally curing the resin (example 1). Carbonaceous fibers are axially oriented to one another as shown in figure 2, and column 11, lines 47-49. Mitchell discloses the carbon composite article having a thickness of 0.728 in (column 14, lines 64-65). However, there is no teaching or

suggestion that the carbon composite article could not have possessed a thickness from 0.05 to 1 mm. Mitchell discloses the thickness is readily achieved through the use of mechanical means embodying spacers of predetermined thickness.

Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the carbon composite article having a thickness in the range instantly claimed as depending upon the intended use of the product. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art. The same token is applied to the basis weight of the carbon composite article.

It appears that Mitchell was using the same materials and the same techniques to form the carbonaceous fiber fabric as Applicants. The carbonaceous fiber fabric comprises a carbonaceous binder in particulate form with a very small amount to bond the woven fabric materials together at a multiplicity of bonding sites. The binder is applied to the fabric material by spraying. Mitchell also teaches that the composite article having superior mechanical properties including high interlaminar shear strength, high edge flex strength and high flat flex strength (column 5, lines 39-42). Therefore, it is the examiner's position that a bending resistance, an in-plane volume resistivity, a gas permeability, a degree of fluffing and would be inherently present as like material has like property.

It appears that the carbon composite article of Mitchell as modified by Winckler are a woven fabric composed of carbonaceous fibers having an average

Art Unit: 1771

fiber diameter within the claimed range and the contact points of the fibers are bonded together by a binder resin. Cassat is relied on as evidence to show that the polyamide resin commercially available under the trademark Kerimid 601 is present in the form of a powder of particle size less than 60 microns (example 1). Therefore, it is the examiner's position that the point contact would be less than 60 microns.

4. Claims 6 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al (US 4,396,663) as applied to claim 1 above, in view of Winckler (US 5,662,993). Mitchell discloses a carbon composite material suitable as a friction material. Mitchell does not specifically disclose a diameter of the fiber and carbonaceous fibers being twisted yarns. Winckler, however, teaches a carbon composite material suitable as a friction material comprising a woven fabric consisting of carbon based fibers spun into bundles and the bundles twisted into strands. Winckler teaches the fibers having an average fiber of 6 to 12 microns (column 5, lines 55-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the carbonaceous fiber comprising twisted yarns as described by Winckler motivated by the desire to control oil flow while retaining structural integrity and balancing other properties of the friction material (see column 5, lines 50-60 of Winckler).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1771

Machino et al (US 6,855,398) discloses a sound absorbing and heat insulating material made from a wool-like carbon fiber aggregate that is composed of carbon fibers and the contact points of fibers are bonded together by a thermosetting resin.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Friday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HAI VO
PRIMARY EXAMINER**